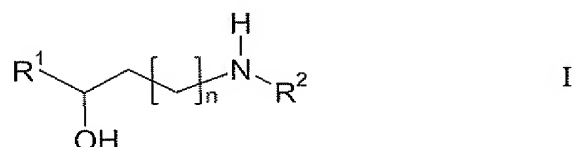


This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1. (Currently amended) A process for the enantioselective preparation of amino alcohols of formula I



in which

$\text{R}^1$  denotes a saturated, unsaturated or aromatic carbocyclic or heterocyclic radical which is unsubstituted or mono- or polysubstituted by  $\text{R}^3$  and/or  $\text{R}^4$ ,

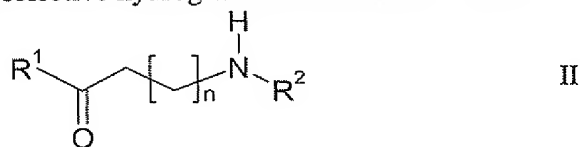
$\text{R}^2$  denotes alkyl having 1-20 C atoms or H,

$\text{R}^3, \text{R}^4$  each, independently of one another, denote H, alkyl or alkoxy having 1-20 C atoms, aryl, aryloxy or  $\text{COOR}^2$ , F, Cl, Br, OH, CN,  $\text{NO}_2$ ,  $\text{N}(\text{R}^2)_2$  or  $\text{NHCOR}^2$

and

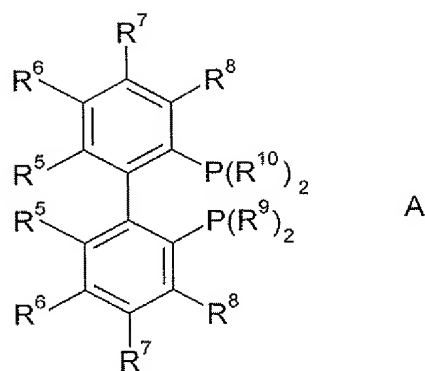
$n$  denotes 1, 2 or 3,

by enantioselective hydrogenation of an amino ketone of formula II



in which

$\text{R}^1, \text{R}^2$  and  $n$  have the meaning indicated above, in the presence of a non-racemic catalyst, wherein the catalyst is a transition-metal complex in which the transition metal is complexed to a chiral diphosphine ligand A

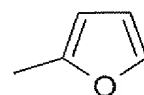
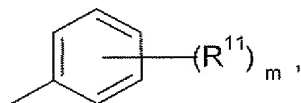


in which

$R^5$ ,  $R^6$ ,  $R^7$  and  $R^8$  each, independently of one another, denote H, alkyl or alkoxy having 1-20 C atoms, aryl, aryloxy or F, Cl, Br,  $N(R^2)_2$  or  $NHCOR^2$

each, independently of one another, denote

$R^9$  and  $R^{10}$



or cyclohexyl

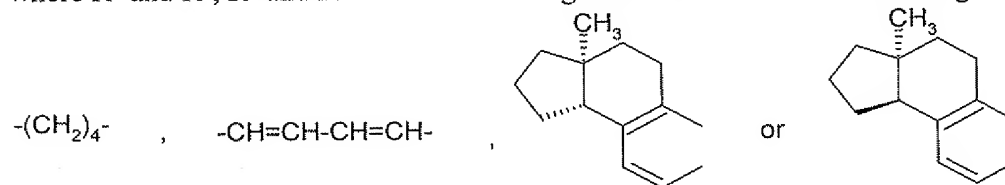
$R^{11}$  denotes H, alkyl or alkoxy having 1-20 C atoms, aryl, aryloxy or  $SO_3Na$ ,  $COOR^{12}$ , F, Cl,  $N(R^{12})_2$  or  $NHCOR^{12}$ ,

$R^{12}$  denotes alkyl having 1-20 C atoms or H

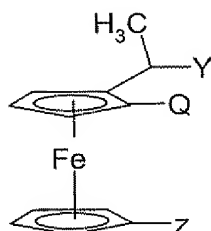
and

m denotes 0, 1, 2 or 3,

where  $R^5$  and  $R^6$ ,  $R^6$  and  $R^7$  and  $R^7$  and  $R^8$  together can also have the meaning



or B



B

in which

Y denotes OH, P(cyclohexyl)<sub>2</sub>, P(3,5-dimethylphenyl)<sub>2</sub> or P(C(CH<sub>3</sub>)<sub>3</sub>)<sub>2</sub>,

Z denotes H or P(phenyl)<sub>2</sub>,

Q denotes PPh<sub>2</sub>, P(cyclohexyl)<sub>2</sub>, P[3,5-bis(trifluoromethyl)phenyl]<sub>2</sub>, P(4-methoxy-3,5-dimethylphenyl)<sub>2</sub> or P(C(CH<sub>3</sub>)<sub>3</sub>)<sub>2</sub>

and

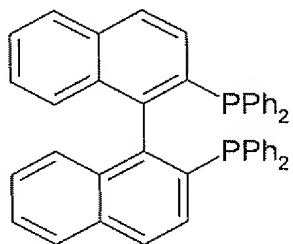
Ph denotes phenyl, o-, m- or p-methylphenyl or dimethylphenyl

and

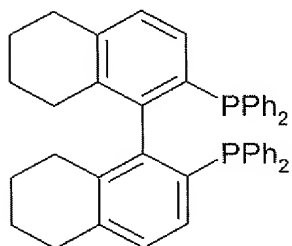
wherein the reaction time of the enantioselective hydrogenation is from 0.1 to 30 hours.

2. (Previously presented) A process according to Claim 1, in which R<sup>1</sup> denotes phenyl or 2-thienyl.
3. (Previously presented) A process according to Claim 1, in which R<sup>2</sup> denotes methyl, ethyl, n-propyl or isopropyl.
4. (Previously presented) A process according to Claim 1, in which n denotes 1.
5. (Previously presented) A process according to Claim 1 for the preparation of (S)-3-methylamino-1-phenyl-1-propanol or (S)-3-methylamino-1-(2-thienyl)-1-propanol or acid-addition salts thereof.
6. (Previously presented) A process for the preparation of a compound according to Claim 1, wherein the chiral, non-racemic catalyst is a transition-metal complex containing one or more metals or salts thereof selected from the group consisting of rhodium, iridium, ruthenium and palladium.

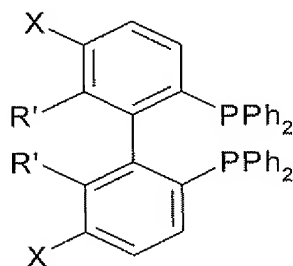
7. (Previously presented) A process for the preparation of a compound according to Claim 1, wherein the chiral, non-racemic catalyst is a transition-metal complex containing rhodium or salts thereof.
8. (Previously presented) A process according to Claim 1, wherein the chiral diphosphine ligand used is a compound of the formula A1 to A5:



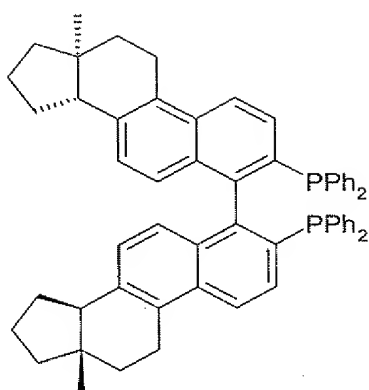
A1



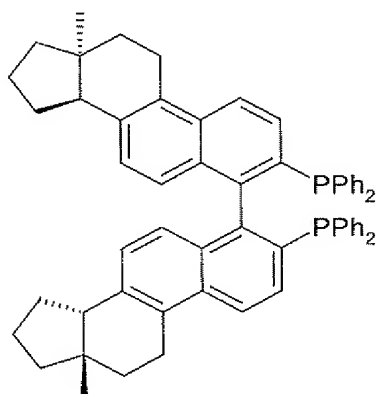
A2



A3



A4



A5

in which Ph has the meaning indicated in Claim 1, and X denotes H, alkyl, O(alkyl), Cl, or F, and R' denotes alkyl O(alkyl) or F.

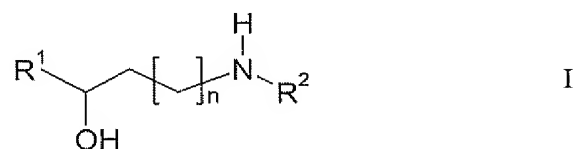
9. (Previously presented)A process according to Claim 7, wherein the chiral diphosphine ligand used is (S)-(-)-2,2'-bis(di-p-tolylphosphino)-1,1'-binaphthyl or (S)-(-)-2,2'-bis(diphenylphosphino)-1,1'-binaphthyl.
10. (Previously presented)A process for the preparation of a compound according to Claim 1, wherein the reaction temperature is between 0 and 200°C.
11. (Previously presented)A process for the preparation of a compound according to Claim 1, wherein the catalyst/ substrate ratio is between 1:5000 and 1:50.
12. (Previously presented)A process for the preparation of a compound according to Claim 1, wherein the hydrogenation is carried out under 1-200 bar of hydrogen.

13. (Previously presented) A process for the preparation of a compound according to Claim 1, wherein the hydrogenation is carried out in the presence of an alcohol.
14. (Previously presented) A process for the preparation of a compound according to Claim 1, wherein the chiral, non-racemic catalyst is a transition-metal complex containing sulfate, chloride, bromide, iodide, PF<sub>6</sub>, BF<sub>4</sub>, methanesulfonate, toluenesulfonate, hexachloroantimonate, hexafluoroantimonate or trifluoromethanesulfonate as anion.
15. (Previously presented) A process for the preparation of a compound according to Claim 1, wherein n=2.
16. (Previously presented) A process according to claim 1, where in n = 3.
17. (Previously presented) A process for the preparation of a compound according to Claim 1, wherein said compound is obtained in an enantiomeric excess of at least 92.8%.
18. (Previously presented) A process for the preparation of a compound according to Claim 1, wherein R<sup>3</sup> and R<sup>4</sup>, independently of one another are H or methyl.
19. (Previously presented) A process for the preparation of a compound according to Claim 1, wherein R<sup>5</sup> and R<sup>6</sup> independently of one another are H, alkyl, O-alkyl, Cl, F or in which R<sup>5</sup> and R<sup>6</sup> together form a ring system.
20. (Previously presented) A process for the preparation of a compound according to Claim 1, wherein R<sup>7</sup> and R<sup>8</sup> are H.
- 21.. (Previously presented) A process for the preparation of a compound according to Claim 1, wherein R<sup>11</sup> is H or methyl.

22. (Previously presented) A process for the preparation of a compound according to Claim 1, wherein R<sup>12</sup> is methyl or ethyl.

23. (Previously presented) A process for the preparation of a compound according to Claim 1, wherein m is 1.

24. (Previously presented) A process for the enantioselective preparation of amino alcohols of formula I



in which

R<sup>1</sup> denotes a heterocyclic radical which is unsubstituted or mono- or polysubstituted by R<sup>3</sup> and/or R<sup>4</sup>,

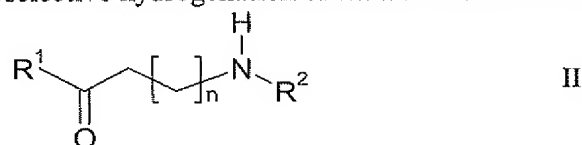
R<sup>2</sup> denotes methyl

R<sup>3</sup>, R<sup>4</sup> each, independently of one another, denote H, alkyl or alkoxy having 1-20 C atoms, aryl, aryloxy or COOR<sup>2</sup>, F, Cl, Br, OH, CN, NO<sub>2</sub>, N(R<sup>2</sup>)<sub>2</sub> or NHCOR<sub>2</sub>

and

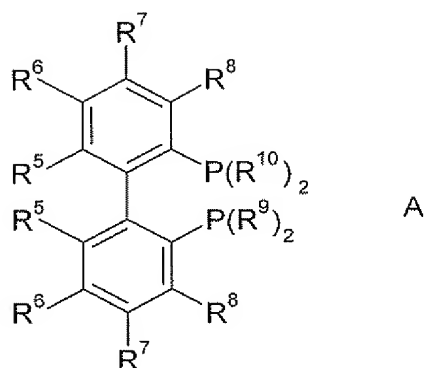
n denotes 1, 2 or 3,

by enantioselective hydrogenation of amino ketones of the formula II



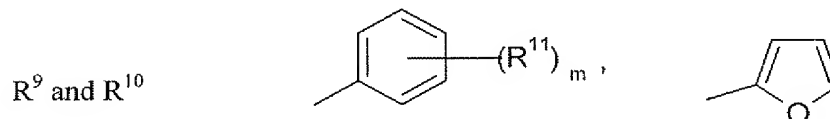
in which

R<sup>1</sup>, R<sup>2</sup> and n have the meaning indicated above, in the presence of a non-racemic catalyst, wherein the catalyst is a transition-metal complex in which the transition metal is complexed to a chiral diphosphine ligand A



in which

$R^5$ ,  $R^6$ ,  $R^7$  and  $R^8$  each, independently of one another, denote H, alkyl or alkoxy having 1-20 C atoms, aryl, aryloxy or F, Cl, Br,  $N(R^2)_2$  or  $NHCOR^2$   
each, independently of one another, denote



or cyclohexyl

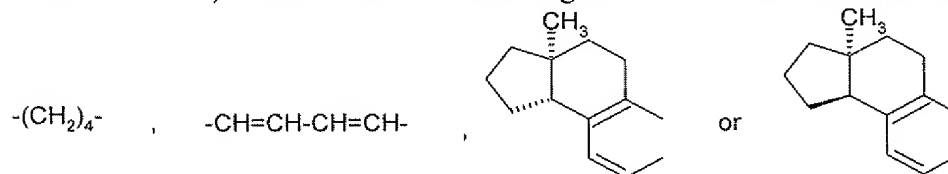
$R^{11}$  denotes H, alkyl or alkoxy having 1-20 C atoms, aryl, aryloxy or  $SO_3Na$ ,  $COOR^{12}$ , F, Cl,  $N(R^{12})_2$  or  $NHCOR^{12}$ ,

$R^{12}$  denotes alkyl having 1-20 C atoms or H

and

m denotes 0, 1, 2 or 3,

where  $R^5$  and  $R^6$ ,  $R^6$  and  $R^7$  and  $R^7$  and  $R^8$  together can also have the meaning





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